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nated, certain problems are indicated which still remain to be solved. But this at least may be said. We must hold fast to our conclusion that value is neither a determination of being nor a form of being. Existence for a subject, being for will, remain "pseudo existence." The feeling of value exists, the relation between the value and the emotional subject subsists, but value itself, if we must have a term, is merely "valid." On the other hand, it seems equally fatal to interpret the objectivity of value by recourse to an over-individual subject or will. We are then back in the difficulties of the relational definition. Rickert complains that Münsterberg in deducing value from an over-individual will does not wholly escape "psychologism," and the claim is, I think, well-founded. But it is not certain that the criticism does not affect his own position also. For over-individual obligation is either a term like round squares, or else it is a relation between an existent self and an object. You can not lift the relation of obligation out of the sphere of existence merely by calling it over-individual, nor can you transcend psychology merely by prefixing to it the name transcendental. It seems better frankly to recognize value as a unique objective not reducible to being in any form. How it is related to being and reality is a problem we have yet to attempt to solve.

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FACT, DEFINITION, AND CHOICE

TO err is human, but nature is above deceit. Let the issue then be tried out in practise; whenever one has a matter to verify let it be put to the test of experiment. This has always seemed sound method so often as man, wearied with seeking truth in the innermost self, has turned to put his questions to the world about him. Too long has man's mind played the sphinx, says this faith. Interrogate a deity which can not play you false, which can be called upon to answer every riddle which concerns itself. Wise is he who knows how to turn the lofty unconcern of nature to satisfy his human cravings.

But is there, after all, as some would say, a type of judgment that can never be made an experimental issue? The wisdom which counsels us to bow to nature's hard inflexibility is not the wisdom which concerns us here. Is there any class of facts which can never take us unawares? Are there cases where the issue of experience can never yield the unexpected?

The chasm between nature and man's will does not yawn quite so wide when one has understood that facts are not as rigid as they

seem. The gap is further bridged when one has come to know that the will to understand the world no less than nature may set at nought our wishes. A science well enough may fail to shed light on the dilemma which was the first source of its systematic dress. The bright spark cast off from the wheel of life and born to illuminate some dark corner of the world may easily light up some other unsuspected nook. The genial insight, the discovery which marks an epoch, a simplification in the scheme of things, that yields man transient satisfaction, may be the result of conscious groping in quite another direction. The will obeys its self-imposed limitations as nature obeys her laws. Has nature her surprises, the will has its caprice. If a gulf be fixed between the facts which man discovers and those which man invents, the clue to its character will not be lurking here.

The problem may be stated in a variety of ways. Whatever has been read into the context of experience *überhaupt* will turn up again as an element of separate experiences. In such instances we like to say that we have only *discovered* such and such a trait of experience because we have managed to *invent* it beforehand. It is notorious how often we are put to it to say whether the outcome of an experiment yields a novelty or only serves to illustrate a definition. This doubt is felt by those, for example, whose habit of thought it is to contrast that series of points, which exhausts the mathematical continuum with that other series of points, which, they say, goes to make up the physical continuum. It is not the fear that the experience of continuous space may some day furnish us a "surprise" point, which has no analogue in the number series, that introduces this distinction—as the arrow-point moves back and forth over the scale each reading is a point in the mathematical series. The physical continuum is assumed as a sort of reservoir of potential points and it is so assumed in order that each new type of point interpolated in the mathematical series shall be guaranteed an application to the space of "reality." If now it turns out that only three point-types result from our definitions of number, the potential points of the physical continuum are all real and the distinction between the mathematical and physical has disappeared. Surely here is a case where experience can never take us unawares; and yet this ghostlike reservoir of potentialities continues to haunt the thought of not a few of us.

In throwing a die we predict that the frequency of each event will even up in the long run. But this prediction can neither be confirmed nor rejected by experience. If each event occurs n times in $6n$ trials, the truth is only served *per accidens*. If n be large and n trials yield the same result we speak of a run of luck. No matter what the outcome the experimenter never will be forced to modify the law; he will always lay the fault to his experiment, for he is concerned

with a matter of definition. If you were to ask him to name the ideal conditions for his experiment's success, he ought to say: those conditions which tend to confirm the law; a die is a good die if the frequency of the different events approaches equality.

Are there judgments of fact whose truth can not be made an experimental issue? This is a question which has always had an important bearing on the meaning of definition. The answer that has been given to it has often decided for a philosopher what his understanding of definition and choice must come to be. The relationship between this question and the meaning of choice has proven to be intimate because a philosophy which does not take freedom into account could never make us understand how knowledge comes about at all.

The choice of an hypothesis which explains established facts and which we must be prepared to give up in the light of a richer experience is a familiar instance of the exercise of freedom. We place our faith in the dogma that fuller knowledge will tend more and more to compromise a false hypothesis while it renders a truer one more workable. This dogma is a matter of definition, for this is what we mean by truth. Such a choice is the fruit of ignorance and may cease to be a choice as soon as observation is carried far enough. An hypothesis, which is based on an induction of known facts and which could outlive any experience, however rich, would be an absolute too thinly veiled to tempt any but the most untutored impulse to belief.

Freedom itself seems at first sight a fact which can never be made to bow to the issue of experiment. Might not ignorance be so far entrenched, might not the balance be so delicately set that the most fleeting force would turn the scales and decide the choice? It was for that passing force that the ass of Buridan must have prayed when he faced starvation because nothing could *just* happen and without any cause. Can experience decide for or against the "law of the reason"? The materialist will answer no and he will add that it is because we can never know enough about the conditions that are involved. Others, answering no, would say that it is because an experience from which ignorance has been completely banished could not be experienced at all—that one can not know unless he can come to know better.

Descartes brought a novel conception to bear upon the problem. His instinct told him that mechanism must not be so conceived that it leaves no room for choice. Unsatisfying as his answer was, even in his own day, it yet served to keep alive the difficulty. The law of the reason holds without restriction save at one exceptional point. The soul seated in the pineal gland looks out upon a universe for which God legislates, upon which God has stamped the necessity of

the mechanical order, and from his vantage-point this soul may from time to time effect changes in a nature in other respects divinely ordered. For Descartes's follower, Spinoza, man's freedom is the only blemish in a perfection otherwise complete. Just as a surface may show a discontinuity where the axioms that determine its geometry do not hold, so does this soul of Descartes enjoy exemption from the chain of matter. Its freedom is guaranteed by a discontinuity in the mechanical order. It is the only loose joint in this system of rigid connections that joins axiom with theorem. To render intelligible this new conception was the task of Descartes's successors. Its originality compelled attention in a later day when mechanism was achieving some of its most brilliant triumphs; when a desire for the continuity of mechanical explanation must have sorely tempted men to give it up.

Kant, too, saw that choice must not be entirely arbitrary, that it must always take certain restrictions into account. The earlier stages of his thought represent these restrictions as absolute. Later he was untrue to his earlier point of view, which crowds freedom out of experience altogether, and it is to his infidelity that he owes his deeper insight. But apart from the fact that the Cartesian manner of understanding human choice was seemingly for Kant a view outworn and repudiated by its consequences, it nevertheless contained a certain germ of truth which may well have determined the meaning which Kant put into *his* doctrine of choice. After all is said, the supersensible world is only a discontinuity in nature, a loose joint where freedom finds a certain play. That self caged in the pineal gland, which is *in* the world, but not *of* it, is not so different from that other self seated in the noumenal world aloof from appearances. Was it not natural for Kant to declare that the self which legislates for nature is somehow exempt from the mechanism which it reads into the world?

To every student who has carried his studies no farther than Euclid, geometry must seem the very embodiment of a necessity that leaves no room for choice. Here is truth absolute from which doubt has been forever banished—or if the caprice of accident find expression at all it must be sought in the application of the science, in the freedom to relate this universal truth to any particulars we please. This conviction is a normal one. It was shared by every mathematician up to the beginning of the nineteenth century. Logic, geometry, and astronomy were the flower of the Greeks' scientific bequest to man. Such was the spell which these triumphs of the Greek mind cast upon modern thought that for two millennia no one had ventured to imagine that here there lurked any opportunity for freedom to find expression. The first emancipation from this spell

came in astronomy. Copernicus showed that the Ptolemaic system was not the only way to describe the motion of the heavenly bodies. He demonstrated the possibility of a non-Ptolemaic astronomy and pointed out that the new view had an advantage over the old in the ease with which it could be applied to the prediction of celestial events. He intimated that the selection of a point of rest in the cosmos is arbitrary and a matter of choice. Geometry had to wait longer for its Gauss and biology harbored the belief in the Platonic doctrine of fixed types until the time of Darwin. The world is still waiting to be freed from the chains forged by the genius of Aristotle. The possibility of a similar choice has not yet revealed itself in the case of logic.

Such episodes as these illustrate Kant's insight into the meaning of choice. Human freedom can only be understood in the light of its history. It is knowledge that "*allmählich*" and not "*einmalig*." Not a reason independent of the will is the guide that fashions and controls belief, but the will acting under its self-imposed restrictions. Kant was the mind that was the first to see this clearly. He saw that freedom is no gift which God has conferred on all men alike, a property as it were of our common humanity. No man is free till wisdom guide his choice. A valid choice is not alone a creative act. It is only brought about by a will that has long been tempted by debate, that has long been schooled by a dialectic experience not all its own creation, but in larger part bequeathed by the past. The consequences of a decision must be clear before that decision may become a conscious choice. To bring these consequences into the light may cost the genius of centuries. The denial of the fifth postulate of Euclid could never have succeeded until it was foreseen that two more fundamental sciences, logic and arithmetic, could not be affected by the choice of another assumption. The emancipation was brought about slowly, the point of attack beginning where the Euclidean system was weakest, that is to say, with the difficulties surrounding the notion of parallels. When it was seen that the consequences of denying the parallel axiom could have no bearing on the other axioms or on logic, nothing could prevent Gauss's important step being taken. The nature of the space we live in has turned out to be a matter of definition. Thus one can point to a few brilliant episodes in the history of thought to illustrate his meaning when he says that man's freedom is realized gradually as the result of many struggles—struggles requiring at times long periods of silent preparation to achieve their triumph. A science can not commit itself to the consequences of a choice until it has come by the wisdom to foresee the effect this choice will have upon its cognate disciplines, and this wisdom is the fruit of a schooling which no one mind may enjoy until it has become the inheritance of mankind at large.

Necessity and universality were the two characteristics which Kant was fond of pointing to as marking the essence of an *a priori* judgment. Will we do violence to his thought if we put his formula in another way? Can the outcome of the experiment be predicted before the experiment is made? and, can any experiment be imagined which would force us to revise our prediction? If the matter were put so our criterion would border perilously on the subjective. What meaning then are we to find in the *a priori* of Kant and still leave a place for Kantian freedom? This brings us to our conclusion. An *a priori* judgment is one whose truth can not be made an experimental issue. Here there is standing-room for absolutist and humanist alike. Their quarrel will hinge upon what one means when he speaks of the impossibility of empirical verification. A philosophy which conceives truth as if it were a static whole will be apt to make this impossibility absolute. But a philosopher, who views the world dynamically, will find that the denotation of this class of judgment is contingent on a thousand issues, each one relative to itself and to the others.

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REVIEWS AND ABSTRACTS OF LITERATURE

Behavior: An Introduction to Comparative Psychology. J. B. WATSON.
New York: Henry Holt and Company. 1914. Pp. xii + 439.

The traditional view that psychology is the science of consciousness, or the more extreme view that it has only to do with "clear consciousness," has been found to be inadequate by numerous persons who have a practical interest in human beings and, as they think, in human minds. Neither education, industry, business, nor medicine finds much of concrete value in the psychology of a recondite awareness available only to its possessor. All of these practical disciplines have, therefore, insisted on a new statement of mental facts, a statement which deals with the phenomena of mental life as objective facts of the same general sort as those with which the anatomist and physiologist have to deal. Memory must be as open to objective study as is circulation, and the mechanisms of association no more inscrutable than the mechanics of digestion.

The revolt of educational, medical, and other forms of applied psychology has been powerfully strengthened in recent years by the growing interest in animal psychology which also could not exist if psychology were only about consciousness and its only method that of introspection. Professor Watson's book on "Behavior" presents the case of the revolt from the animal psychologist's point of view. It is virtually a declaration of independence with a statement of the reasons therefor.